DOCUMENT RESUME

ED 068 219 95 RC 006 494

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TITLE Responsive Environment Program for Spanish American Children. Evaluation Report, 1971-72.
INSTITUTION Adobe Educational Services, Lubbock, Tex.
SPONS AGENCY Clovis Public Schools, N. Mex.; Office of Education (DHEW), Washington, D.C.
PUB DATE Jun 72
NOTE 89p.

EDRS PRICE MF-$0.65 HC-$3.29
DESCRIPTORS Affective Behavior; Analysis of Covariance; Bilingual Students; *Cognitive Development; Community Involvement; *Early Childhood Education; *Handicapped Students; Language Development; Parent Participation; Program Evaluation; *Self Concept; *Spanish Speaking; Statistical Data

ABSTRACT

The Responsive Environment Program for Spanish American Children (REPSAC) is an educational intervention for 30 "high risk" bilingual children of ages 3, 4, and 5 in Clovis, New Mexico, and a similar group of children from Portales. Subjects were selected on the basis of various language handicaps, perceptual and motor problems, and educational deprivation. The program's objectives were to provide successful experiences for Spanish American children in the areas of language learning in both English and Spanish and in improving cognitive and affective development. The evaluation design used to assess the effectiveness of REPSAC was a 2-group (experimental and control group) pre- and post-test covariance design. The control group was used to compare changes made in the experimental group. Among some of the measures employed were developmental profiles, the Illinois Test of Psycholinguistic Abilities, parent interviews, the Templin-Darley Articulation Test, and the Tennessee Self-Concept Scale. The project evaluation was provided by an independent team consisting of bilinguals; a clinical psychologist; a speech therapist; and early childhood, teacher education, and educational research specialists. Basic data, such as family history and attendance, were recorded by the project staff. The findings of the evaluation report indicate that the REPSAC project has made positive and significant impact upon the major project objectives for a group of high-risk children. Continued observations note increases in the subject's self-concept. Parents reflect positive attitudes. (NQ)

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ED 068219

EVALUATION REPORT
1971-72

RESPONSIVE ENVIRONMENT PROGRAM FOR SPANISH AMERICAN CHILDREN

SPONSORED BY:

MEDIA SERVICES AND CAPTIONED FILMS
DIVISION OF EDUCATIONAL SERVICES
BUREAU OF EDUCATION FOR THE HANDICAPPED
U.S. OFFICE OF EDUCATION

UNDER CONTRACT WITH:

CLOVIS MUNICIPAL SCHOOLS
CLOVIS, NEW MEXICO

PREPARED BY:

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Authors: Ainsworth, Len and Alford, Gay

Title: Evaluation Report, 1971-72, Responsive Environment Program for Spanish American Children

Origin: Adobe Educational Services, Box 4081, Lubbock, Texas

Sponsor: Media Services and Captioned Films, Division of Educational Services, Bureau of Education for the Handicapped, U.S.O.E. under contract with Clovis Municipal Schools, Clovis, New Mexico

Report: Evaluation Report, Annual, No. 1

Publication date: June, 1972

Contract: #OEC-0-071-1192 (615)

Abstract

The Responsive Environment Program for Spanish American Children is an education intervention for 30 "high risk" bilingual children of ages 3-5 in Clovis, New Mexico. The group reflects high incidence of various handicaps, as do comparison groups. Birth weight was a prime concern; most were below the 5 1/2 pound standard set by the World Health Organization.

The project is aimed at providing successful experiences and learning in two languages. It is in a noteworthy setting within the target area. The program draws heavily upon three experimentally developed models in early childhood education. They include the responsive environment (typing booth) model of the Far West Educational Laboratory, Project LIFE, and the New Nursery School concept. Some modifications, to include emphasis upon development in both English and Spanish, have been made.

The evaluation design generally utilizes a nonequivalent control group design with analysis of covariance employed, using pre-tests as covariants. Time series measures for areas of observation are also made. The use of a control group evaluation design with low-income, culturally different, high-risk children is demonstrated, as is the value of program elements, including parent and staff activities.

Evaluation is provided by an independent team which utilizes skills of professionals in several areas. The report explicates positive findings related to the first year of project operation. Statistically significant gains were shown in English language development and in learning aptitude. Positive attitudes and increase in self-concept are also shown, as are pupil's ability to be involved in individualized and group activity.

FOREWORD

The following evaluation report is provided for the 1971-72 school year for the Responsive Environment Program for Spanish American Children. It is the result of data collection and analysis by the independent evaluators, and is directed toward program accomplishment.

The evaluation group recognizes and hereby expresses appreciation to the director, staff and participants of the program for their cooperation in the evaluation effort. The parents of the children identified as controls are acknowledged for their assistance.

The invaluable assistance of the various professionals and paraprofessionals on the evaluation team is also acknowledged; the responsibility for whatever limitations the report may contain is accepted by the coordinator.

Len Ainsworth
Adobe Educational Services
June, 1972

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ABSTRACT

The Responsive Environment Program for Spanish American Children is completing its first year of activity. It is an educational intervention for 30 "high risk" bilingual children of ages 3, 4 and 5 in Clovis, New Mexico. The project has also involved for evaluation purposes a similar group of children from Clovis and Portales.

The subject population reflects high incidence of various handicaps, ranging from physical difficulties to learning aptitude to economic and cultural deprivation. Language handicaps, perceptual and motor problems and educational deprivation were present. A prime concern relates to birth weight of the group involved. Most of the group is below the 5-1/2 pound standard set by the World Health Organization. These handicaps contribute to the educational "high-risk" character of the group.

This is a demonstration project for a particular population. It is a group-educational program as contrasted to an individual-clinical project. It has aimed at providing successful experiences for Spanish American children in the areas of language learning in both English and Spanish and in improving cognitive and affective development.

The project is housed in a facility which utilizes a former single family house as a teaching facility. The house and adjacent small building which serves as an office workroom are located in the target population area.

The project has drawn heavily upon three experimentally developed models in early childhood education. These include the responsive environment (typing booth) model developed by the Far West Educational Laboratory, the Project LIFE

material through the National Education Association and the New Nursery School concept developed at the University of Northern Colorado. Some modification, particularly of the latter unit, has included emphasis upon development in both languages.

The design for the major evaluation effort relates to the total program and generally utilizes the Nonequivalent Control Group Design.[1] It also draws upon the time series design for areas involving continuing observation. Statistical analyses were made, with computer use, through the Analysis of Covariance for the major measures. Many of the related data, such as incidence of handicaps and attendance are reported as percentages for comparison.

The project evaluation is provided by an independent team that maintained continuing contact and observation in the project. The evaluation team included bilinguals, a clinical psychologist, a speech therapist, early childhood, teacher education and educational research specialists. This report is made from the findings of data taken by the evaluation group and basic data such as family history and attendance recorded by the project staff.

Findings

This evaluation report explicates positive findings related to the project for its first year of operation. In addition to determining that the control group design could be utilized in low-income, culturally different setting with high-risk young children, other significant findings were made. It is evident that learning aptitude, according to instruments used, did significantly improve for the experimental over the control group. Statistically significant gain was shown in English language development according to the Peabody Picture Vocabulary Test. Measurable but not statistically significant gain was made by the

experimental group according to the PPVT in Spanish. Analyses of taped samples of language strongly confirm these findings and clearly indicate improved ability and confidence in response. The pupils ability to attend or be involved in individual and group activities also increased.

Continued observations note increase in self-concept as revealed in the area of awareness of self and others, self confidence and effectiveness. Positive attitude toward the project is reflected by parents in periodic surveys and in high attendance rates in this voluntary program.

In simplified terms, the evaluation report finds that the REPSAC project has made positive and significant impact upon the major project objectives for a group of high-risk children. Analyses of the findings reveal that they are statistically significant well beyond the effects of chance; subjective judgement indicates that the social significance is also noteworthy.

SECTION I

BACKGROUND

Initiation

The Responsive Environment Program for Spanish American Children (REPSAC) was initiated as a pilot program in the Spring of 1971. The activities of that beginning effort were not encompassed by this evaluation period, but are mentioned for two reasons. First, the project model was installed for a trial and staff orientation was begun. Second, some of the instruments used and discussed further in this report were field tested for applicability at that time.

The pilot period is of sufficient uniqueness and significance to mention as a positive element of this project. Modifications made as a result of that effort involved not only the program but the evaluation design and instrument choice as well.

The REPSAC project was initiated, as an idea, a proposal, and a working program by Mrs. Gay Alford of the Clovis (New Mexico) Municipal Schools, using the Responsive Environment concept.

The program is receiving annual funding from Media Services and Captioned Films, Division of Educational Services, Bureau of Education for the Handicapped, U.S. Office of Education. The project began full-scale operation with children in September, 1971.

As the project name implies, it involves a particular group of children of the ages 3-5 and also draws upon a control group of similar children. The participants are educationally "high risk" children because of the incidence of handicapping conditions which will be described in the appropriate section of this report.

The Locale

The economy of Clovis is heavily related to agriculture in farming and ranching. An Air Force installation adds to the economy and variety of population composition. The majority population is white, ordinarly termed Anglo; the minority population is large, and variously referred to as Spanish American, Mexican American or Spanish Speaking. While none of the latter designations is sufficiently encompassing or limiting to be adequate, they are readily understood to attempt to differentiate those native Americans whose ancestry tends to be more directly traceable to Indian and Spanish heritage and culture than to other backgrounds.

The conglomerate of us who are referred to as Spanish American in Clovis includes those who have for more than 200 years resided in the New Mexico area and descended from Spanish colonists of the 1600s. It also includes first and second generation Spanish speakers who migrated to the area from the Rio Grande Valley of Texas and the valleys of northern New Mexico. There are others who for various reasons, but usually of sanguinous relationship, have recently come to the area from Mexico to the South and Michigan, Colorado and California from the other points of the compass. Some of the latter group appear, among the women and young children, at least, to be almost entirely monolingual in Spanish.

The people, termed a group only for the purposes of differentiation from the Black and Anglo, who are encompassed in the previous description, constitute about 25% of Clovis and the surrounding area. It is from anong this group that the subject group was derived. A control group of approximately half the size of the subject group was also chosen from this population.

The remainder of the control group was chosen, according to the same criteria as the other, from the population of a sister-city, Portales. Portales is only twenty miles from Clovis, and exhibits similar population and geographic characteristics.

Eastern New Mexico University is located in Portales and contributes to the educational level of the community.

The Setting

The REPSAC project is located at 400 West Grand Avenue, just southwest of the central business area of the city. It is in the housing of the target area, but on a main street so that it is readily accessible to visitors.

The facility consists of a fairly large older house on a corner lot with a relatively modern building, formerly used as a beauty shop, located immediately to the east. The house was redeveloped inside as the teaching facility but the exterior is relatively unchanged. The remodeling included removing two interior walls to provide large open space for group and individual activities. One room was divided to provide individual teaching cubicles for the Responsive Environment and Project LIFE activities. Another part of that room was fitted with speakers and one-way glass to provide for observation and monitoring. Another room was maintained as a kitchen, serving and activity area. The remaining room has been utilized as a testing and storage area. The existing bathroom was kept and an additional water outlet was installed. Carpet in areas other than the kitchen and bath completed the changes except for additional heating and electrical (including strategic microphones for monitoring) installations.

The second building consisting of two rooms and a bath has been developed as an office. It provides work space for the director, secretary, home-visitor and shared space for the teaching teams. It has a very small meeting area which is frequently used by staff and visitors.

The two buildings have a common yard, enclosed by a low chain-link fence with a large gate which allows for entrance for loading and unloading children. Some

playgground equipment, including items such as a sandpile, swings and a climbing frame are provided.

This facility has been described in some detail because of its uniqueness. It provides for institutional needs without looking like traditional institutions. It is located in the target area and blends so that it is not discernable from the rest of the community except by a neatly lettered sign on the front of the office building.

Many of the visitors to the project have commented about the appropriateness of the facility. The members of the site-visit team who monitored the project for the Bureau of Education for the Handicapped were explicit in indicating that the facility should be described in the evaluation report.

The teaching facility is of sufficient size to accommodate the current enrollment The booth areas for individual instruction are well isolated and function smoothly. The large group area, with the addition of low movable storage furniture is very functional for the early childhood model employed.

The early childhood model involves feeding two groups of 15 children each at lunch. The food is brought in mobile servers to the kitchen and served. This requires rearrangement of tables in the kitchen and adjacent area daily. The participation of aides has allowed this to function well, but, obviously an additional room would have simplified this operation.

The office building is adequate in size for the current staff. It is to the credit of the director and staff that they have shared space and equipment in the office area to make it a functional system.

In summary the evaluation group, from many individual visits during the year, attests to the functional arrangement of the facility, and applauds its relation to the target community and location. The size of the facility is adequate for the teaching program. It would be advantageous to have additional office space and dining space, although it is recognized that the possibilities of developing such areas in leased facilities are somewhat remote.

The Target Population

This project is designed to serve educationally handicapped children of Spanish American backgrounds. The Spanish American population, which is also generally Spanish speaking, is a large minority of the area. Criteria for selection of the subject and control groups are indicated in the tables in the Evaluation section of this report, but are mentioned here to designate the population.

The school population of Clovis is about 21% Spanish American which is slightly less than the incidence in the city population which is now estimated to be 25%. The Bureau of Education for the Handicapped (Williams, '68) noted that the Spanish surname population in New Mexico at the 1960 census was 28.2%; it is now estimated to be 38% over the state.

There were several criteria by which children were chosen to participate; one of the primary items was that of birth weight. There is evidence which indicates that low birth weight may be associated with high-risk children in terms of educational and physical handicaps. The World Health Organization standard of 5-1/2 pounds weight at birth or less has been accepted for priority consideration for program selection from the target group. Hospital records were surveyed to ascertain the adequacy of family records for those children born in the area.

Other criteria for selection included identification as Spanish American, which perhaps particularly in New Mexico because of many generations of residence must be studied at greater depth than classification of surname as being Spanish or other origin.

The number of children in the family, their ages and family income were also considered in the selection process.

Notation of other or multiple handicapping conditions were also considered in selection of children who would, by all of these criteria, many of which may be associated, seem to be high-risk children in an educational setting.

The parameter of the population included the similar population of Portales as indicated previously. The project limited its subject (experimental) group to children identified by the criteria in Clovis only because of the transportation provisions. No rural children or children from Portales participated in the intervention effort.

Thirty-two children were identified and enrolled during 1971-72. Nine control group children were located in Portales and the other 21 were Clovis residents, although at least two were rural part-time in that their father was involved in ranch labor on a seasonal basis.

The identification of Spanish American children as being likely to reflect educational handicaps was pragmatically derived from study of trends in the southwest. It is well established that Mexican American children in the Southwest have traditionally been overrepresented (according to expectations from their incidence in the general population) in Special Education classes for such groups as the mentally retarded. It is also noteworthy that enrollment in state schools for the handicapped, noted by Williams in 1968, contained 48% Mexican Americans in New Mexico.

The following comparisons of Ethnic composition for the two school districts most directly involved were taken from data provided by the State Department of Education, Division of Special Education, Santa Fe, New Mexico as of December, 1971.

Ethnic School Enrollment
by Percentage

	Anglo	Spanish	Other
Clovis			
Total School	68.7	21.	10.3
Special Education	41.0	39.0	20.
Portales			
Total School	70.7	27.8	1.5
Special Education	44.7	53.7	1.
Statewide Average			
Total School	40.5	46.6	9.7
Special Education	25.2	59.6	11.6

There is also a bulk of research which relates to the generally lower achievement of Mexican children in the educational system. The drop out rate has been higher for the Spanish American population than for the Anglo counterpart in many school districts of the region. The incidence of retention has traditionally been higher for the same target population.

Much research and opinion, including extensive testimony to the national congress, stresses the educational handicap faced by the typical Spanish-speaking child. These children selected not only are in this category, but exhibit the other characteristics mentioned which would seem to mitigate against success in a traditional educational endeavor. While these factors and discussion of causes need no elaboration here, they point to the target group of the REPSAC project as being handicapped children.

The educational handicap which exists for each of them stems from several factors. While language difference is questionable as an adequate explanation[5], it is often considered to be a contributory cause. Cultural differences and the alien environment of the usual educational system attuned to traditional Anglo values also contribute.

The demographic, economic and family size figures, noted in the appropriate sections of this report, also relate to the characterization of the children as disadvantaged. Williams, in the BEH report previously cited, made adequate case for labeling the target children selected for REPSAC as being educationally handicapped.

Incidence of Handicapping Conditions

The REPSAC project is essentially a demonstration program of educational intervention. Emphasis was placed upon determination of the incidence of conditions which

relate to educational handicaps. General cultural-economic handicaps which impact a usual educational environment, the operational level or age, language development, obvious physical impairment, visual, and perceptual problems were studied. This section relates the incidence of handicapping conditions which were noted.

While norm referenced tests are subject to much question as to their validity for the children in question, there is some value to be gained from their use. In the first place, change may be computed from the base line data somewhat objectively. Second, some of the tests do appear to be related to "general learning capability in the schools." According to one of the tests used to indicate academic aptitude (The Hiskey Nebraska Test of Learning Aptitude), the scores confirm the anticipated educational handicaps faced by these children as they enter educational programs.

For example, the IQ range, with all of the qualifications implied for the instrument used to determine aptitude for this population, was from 60-106, both more narrow and generally lower than might be expected for a group randomly drawn from the population of the nation.

Another significant point is that the average IQ score was 84 which, qualifications notwithstanding, would traditionally be ranked in the slow-learner range. Another classification indicates that 44% of the experimental group fell into the score range below 85. This information was available only to the evaluator and to the director to avoid labeling of youngsters, but does indicate additional evidence of an educational handicap.

The control children exhibited a very similar pattern on this test with a range of from 60-121, a mean of 80.6 and with 19 of the group scoring below 85. A statistical comparison, illustrated in the Evaluation section, indicated that the differences between Experimental and Control groups were not significant on the pre-test.

At the risk of redundancy, it is reiterated that the evaluator recognizes that cultural differences are likely to negatively impact aptitude scores. The measure chosen was selected because it can be administered with a minimum of language involvement, i.e. it can largely be pantomimed. While this ease in administration does not avoid cultural bias, it does reduce the lack of language factor often associated with testing children of other than English-speaking background. It is also repeated that this test of learning aptitude does appear to include a heavy loading of factors which relate to usual educational achievement. Given these conditions, it is evident that more than 2/5 of the group reflects educational handicap as indicated by the aptitudes so measured.

Handicap	Incidence	Measure
Learning Aptitude	(Ex. Grp.) 44%	Hiskey Pre-test

Another, and probably most often mentioned, handicap for the Spanish American child is that of his home language. There is sufficient agreement and long term documentation to indicate that children in this area whose first language is not English do less well in school activities than do their English-speaking counterparts. It is an oversimplification, of course, to merely attempt to determine what appears to be the dominant language for a young child, or what language is spoken more frequently in a bilingual home. There may well be a cultural "set" or predisposition toward viewing experience through the first-learned language. Language theorist Benjamin Whorf indicates that the way in which reality is perceived depends upon language, while empiricists Bowen and Stockwell[2] from the viewpoint of linguistics, indicate the fallacy of assuming the primary importance of vocabulary in language learning. Voegelin[3] notes that one seldom learns a second language at the same time or to the same degree that he internalizes his first. Others refer to language as a form of cultural behavior.[4] It is obvious that Spanish is the first language of many of these children and their parents.

Information was gained from the parents about the language spoken predominantly in the home. Spanish-speaking interviewers were used in an attempt to avoid a possible stigma against use of Spanish in the area. Replies indicated that 15% of the homes utilized Spanish most of the time while almost the same number chose English. The remaining 71% said the family was bilingual, that is, they used both languages about the same. According to the language dominance rationale made above, the handicaps of the subject group would likely exceed and at least include:

Handicap	Incidence	Measure
Language	(Ex. Grp.) 86%	Parental Opinion

A further investigation of language was made through the Peabody Picture Vocabulary Test. This instrument has had wide use in recent years with both monolingual and bilingual subjects. A regional adaptation was used for the Spanish version. While the measure will be described and findings explained later, it is referred to here in its relation to establishment of language handicap. From the English version, it was accepted that a functional level (mental age) of one year or more below chronological age might be classified as a handicap in a usual educational setting. From this standard the group reflected the following on the pre-test:

Handicap	Incidence (Ex. Grp.)	Measure
Lang. (Eng.)	66%	PPVT
Lang. (Span.)	81%	PPVT-S

The Spanish version showed an even greater incidence of handicap, with the net result that many had a low language level in either.

Visual Perception was also used in checking the development of both experimental and control groups of children. Individual examination scores were compared with age

level norms. Pre-tests were not scorable for 9.7% of the group, and 42% of the remaining children with deficiencies showed perceptual deficits in more than one area. A larger incidence of difficulties related to color perception was found than would be expected in an unselected group.

Handicap	Incidence	Measure
Visual Perception	(Ex. Grp.) 20%	Farnsworth Dichotomous Test of Color Perception
	52%	Frostig Test of Perceptual Development

Physical examinations were not given to the subject group routinely. There were a number of handicaps which could be identified by the staff and evaluation group. For the REPSAC classes these gross observations revealed (1) female-congenital heart malfunction (withdrew for surgery in mid-year) (2) male-deformed breast bone, strabismus; poor visual acuity; (3) male-virtually no intelligible speech in either English or Spanish, drooled; (4) male-congenital deformity of left hand (middle fingers webbed and poorly developed), physically very small for age; (5) male-right foot turns inward; (6) female-difficulty in walking and running from crooked legs and inward turned feet; (7) female-extreme visual impairment.

Handicap	Incidence (Ex. Grp.)	Measure
Physical	26.6%	Clinical Observation

Economic and cultural deprivation is indicated in a BEH publication[5] to have a causitive relationship with intellectual deficiency. While no attempt is made to assess the relative contributory effects, the incidence of economic need is amply evident in this population. Using the poverty level income base as established by USOE as a guide, the following is noted.

Handicap	Incidence (Ex. Grp.)	Measure
Economic Deprivation	66%*	Parental Response

*When the size of family is taken into account, over 90% of them have more than four members, which would cause the incidence to be much higher if the $600 income per person were not allowed, or if in fact it is not high enough to support an additional child.

Educational deprivation must also be considered as a handicapping factor. It is a widely used factor in establishing socio-economic status. In this instance it is noteworthy in that at least 53% of the fathers did not attend school past the junior high school level.

A primary hypothesis in developing the REPSAC program was related to birth weight. It was accepted that low birth weight was a potential handicap in educational development. Research of direct and tangential nature support this idea. The fact that low birth weight in the United States occurs with higher frequency among non-whites than whites is related by some[5] to economic and nutritional deprivation, for example, which has implications for the program. The World Health Organization standard of 5-1/2 pounds for identification of low birth weight was used.

Handicap	Incidence (Ex. Grp.)	Measure
Low Birth Weight	80%	Available records-Hospital, Church, etc.

When the standard of 6 pounds, which is also found in the literature, is used, only two of the original enrollees exceeded the standard.

It is obvious from the foregoing that there are multiple handicapping conditions which exist among the subject population. Even cursory examination indicates the inescapable intersections of the set of children with low birth weights with the other handicapping conditions.

While the incidence of handicaps in this section has dealt primarily with the experimental groups, the control children were drawn from the same population and exhibit similar characteristics. The evaluation section will illustrate that differences which did exist were not statistically significant.

The following chart illustrates the multiple nature of handicaps for individual children. It is made for the original enrollees during the year. The average number of handicaps was six, according to the criteria used.

Description of Figure 1

Criteria for designation of the handicaps shown in the following chart include:

1) Birth weight - 5-1/2 pounds or less
2) Economic - Income below the poverty levels, adjusted to family size
3) Educational - Father had no formal education beyond junior high school
4) Home Language - The language most often used in the home was Spanish or both languages were used about the same amount
5) Spanish PPVT - Mental age score was a year or more below chronological age
6) English PPVT - Mental age score was a year or more below chronological age
7) Hiskey IQ - Scores of less than 85, or slow-learner range
8) Physical - identification by clinician or medical report
9) Visual Perception - Scores below acceptable level indicated for Frostig test
10) Color Perception - identified by Farnsworth test

The following chart summarizes and illustrates the incidence of handicapping conditions as determined by the criteria discussed in the preceeding for the REPSAC experimental group at intake and pre-test time in the Fall of 1971.

Handicaps Summary

Pupil	Birth Weight	Eco-nomic	Educa-tional	Home Lang.	Span. PPVT	Eng. PPVT	Hiskey IQ	Phys-ical	Visual Per.	Color Per.
1		x	x	x	x					
2	x	x			x	x	x	x	x	
3	x		x	x		x			x	
4		x	x	x	x	x	x	x	x	x
5	x			x				x	x	
6	x	x		x	x				x	
7	x		x	x	x	x			x	
8	x	x	x	x	x			x		
9	x	x			x		x			
10		x		x	x	x			x	
11	x			x	x	x	x		x	
12	x	x		x	x					
13	x	x		x	x	x	x	x	x	
14	x			x	x	x			x	
15	x			x	x				x	
16				x	x					
17		x	x	x	x	x	x	x	x	

Figure 1

Handicaps Summary
(cont.)

Pupil	Birth Weight	Eco-nomic	Educa-tional	Home Lang.	Span. PPVT	Eng. PPVT	Hiskey IQ	Phys-ical	Visual Per.	Color Per.
18	x	x	x	x				x		
19	x	x	x	x	x	x	x		x	
20	x		x	x	x	x			x	
21	x			x	x	x			x	
22	x	x	x		x	x	x		x	x
23	x	x		x	x	x	x			
24	x		x							
25		x	x	x	x	x			x	
26		x	x	x		x				
27				x	x	x	x		x	x
28	x	x	x	x		x			x	x
29	x	x	x	x	x	x			x	x
30	x	x	x	x	x	x			x	
31	x	x	x	x	x		x		x	
32	x	x	x	x	x	x	x		x	

Range of identified handicaps 2-9
Mean number - 6

Figure 1 (cont.)

Illustrative Profiles

As noted in the previous section, there are children who exhibit miltiple handicapping conditions. A summary of the impact of these conditions as seen by the clinical psychologyis is shown for illustrative purposes. The illustrations also indicate learning emphases which the data indicate to the clinician.

The representative handicaps noted include physical (of several types), mental aptitudes, language (in both English and Spanish) and speech problems and coordination, visual, and auditory difficulties.

REPSAC - Child "X"
Age: 4 years, 10 months (inidial evaluation)
Sex: Male

The subject earned a mental age of 3 years, 0 months on the Hiskey-Nebraska Test of Learning Aptitude at the chronological age of 4 years, 10 months. Although his score would fall in the mentally retarded range, this child is only a functional retardate rather than a familial one.

The subject is physically mature and large for his age. Verbal communication in either Spanish or English is limited with much of his attempted speech being unintelligible. The subject has lettle self-confidence, is apprehensive in a new situation, and has a very short attention span. The subject seldom smiles, is rather reticent, and seems fearful of most people and situations.

Results of other evaluative measures are as follows:

1) Peabody Picture Vocabulary Test English-developmental level 0 years;
   Peabody Picture Vocabulary Test Spanish-developmental level 2 years, 8 months
2) Illinois Test of Psycholinguistic Ability - (administered at age 5 years, 5 months)

Auditory Association-2 years, 6 mo.
Auditory Reception -2 years, 6 mo.
Visual Reception -3 years, 1 mo.
Visual Association -2 years, 4 mo.

3) Developmental Test of Visual Perception - Deficits in Eye-Hand Coordination, Figure-Ground, Constancy of Shape.
4) Farnsworth Dichotomous Test of Color Perception - Visual acuity problem and difficulty in following directions

Suggested learning emphases based on initial evaluations:

1) speech and language development in both Spanish and English using verbal clues as concrete examples; extra emphasis needed;
2) matching of like objects to improve visual reception and discrimination;
3) matching of sounds to objects (or pictures of objects) to improve both auditory and visual perception and association;
4) eye-hand coordination tasks such as building blocks, large beads, etc. to improve visual-motor coordination;
5) matching of like shapes, sizes, colors;
6) identification of objects by feel alone after learning initial visual identification;
7) learning to follow short, simple, step-by-step instructions involving sequencing of events;
8) field trips of infinite variety to alleviate the very limited experiential background.

Another factor of extreme importance is to provide a person (or persons later on) to whome the child can relate well and trust. The subject must have numerous opportunities for success accompanied by immediate praise and encouragement to enhance his poor self-concept. Inasmuch as the subject has poor gross-motor coordination, severe speech and language problems, poor fine-motor coordination, and an extremely short attention

span, the possibility of minimal brain dysfunction should be considered.

REPSAC - Child "Y"
Age : 4 years, 7 months (initial evaluation)
Sex: Male

The subject is an extremely shy and dependent youngster with numerous impairments. During the first ten days of attendance at REPSAC, the child cried and rubbed his eyes and clung to the teacher. The youngster finally became accustomed enough to the examiner that he would go with him. After finally getting into the evaluative situation, the subject enjoyed the tasks and cooperated to the best of his limited ability. The child has little self-confidence, requires much encouragement to persist on any task but tends to perseverate when he discovers a task at which he can succeed. The subject's listening habits are very inadequate, his attention is extremely short, and he tends to react impulsively. Physical handicaps include a pronounced visual acuity problem, a deformed breast bone, feet that turn inward and make walking difficult, strabismic eyes, excessive drooling from a slack mouth, and very poor fine- and gross-motor coordination. Inasmuch as many of these impairments are frequently associated with an organic brain syndrome, the possibility of neurological involvement seems to be high.

Results of initial evaluative measures are as follows:

1) Hiskey-Nebraska Test of Learning Aptitude - mental age 2 yrs., 6 mo.
2) Peabody Picture Vocabulary Test English - developmental level 2 years, 3 months
   Peabody Picture Vocabulary Test Spanish - developmental level 2 years, 6 months
3) Illinois Test of Psycholinguistic Ability
   Auditory Reception -3 yrs., 3 mo.
   Auditory Association-3 yrs., 1 mo.
   Visual Reception -3 yrs., 1 mo.
   Visual Association -2 yrs., 8 mos.

Learning deficits seem present in both the visual and auditory channels with no intact primary sensory input. Associative thinking (conceptualization) seems difficult from both visual and auditory stimuli. Overall learnin- capability on a non-verbal basis is comparable to a 2-1/2-year-old. Very limited language development in both Spanish and English further inhibits expressive and communicative ability.

Suggested learning emphases:

1) much emphasis on language development, both Spanish and English, using visual clues for multi-sensory input;
2) simple listening games, stories, etc. to improve poor listening habits;
3) matching of sounds to objects (or pictures of objects) to improve both visual and auditory perception and discrimination;
4) identification of objects by name (both Sanish and English);
5) fine-motor tasks such as stringing large beads, building with blocks, putting together large size puzzles, etc.;
6) gross-motor tasks such as kicking a soft inflated ball, rolling the ball, tossing the ball, catching the ball, walking a broad line on the floor, etc.;
7) learning to discriminate objects by shape, size, color;
8) learning to discriminate objects by fell alone after visual identification is learned;
9) learning to follow simple step-by-step instructions;
10) matching of objects, pictures, colors, etc.;
11) field trips to enrich the impoverished environmental background;
12) unlimited opportunities for success to overcome the extreme lack of self-confidence;
13) provision of accepting, understanding teachers and aides to afford continued support for his insecurity;

14) medical attention to visual and physical impairments.

REPSAC - Child "Z"
Age: 4 years, 1 month (initial evaluation)
Sez: female

The subject is a physically small and undernourished appearing 4-year-old-female who seems to have multiple impairments. Both fine and gross-motor coordination seem to lag behind the chronological age. The extreme visual acuity problem (with glasses only recently acquired) may be a factor in the motor-coordination. Corrective lenses are very thick, indicating much visual impairment. The extent of the subject's corrected visual acuity is difficult to determine (according to the optometrist) because of unreliable responese from the subject. The child's attention span is relatively short and her memory recall from both visual and auditory input is limited.

Results of evaluative measures are as follows:

1) Hiskey-Nebraska Test of Learning Aptitude - mental age 3 yrs., 6 mos.
2) Peabody Picture Vocabulary Test English - developmental level 3 years, 6 months
   Peabody Picture Vocabulary Test Spanish - developmental level 2 years, 4 months
3) Illinois Test of Psycholinguistic Ability
   Auditory Reception - 4 yrs., 0 mo.
   Auditory Association - 4 yrs., 1 mo.
   Visual Reception - 5 yrs., 2 mos. (this score reflects the encouragement of the subject to "guess" at answers she was not sure of as suggested by Dr. Sam Kirk, author of the ITPA. This examiner does not approve of this methodology, but he followed the recommended procedure)
   Visual Association - 3 yrs., 8 mos.

The subject is much more fluent in English than in Spanish, as indicated by her verbal responses on the ITPA and Peabody Picture Vocabulary Tests.

Suggested learning emphases:

1) rote learning of various sequential tasks, both visual and auditory, to improve short memory span and listening skills;
2) naming objectes in English and Spanish, but with emphasis on her deficit in Spanish;
3) simple listening games, repeating a short story, learning rhymes, etc. to enhance sequencing and retention;
4) both gross- and fine-motor skill builders--running, hopping, jumping, and drawing large pictures on the chalk board, cutting and pasting, bead-stringing, puzzles;
5) matching objects by color, size, shape, etc.
6) provide multi-sensory stimulation to lessen effect of visual acuity problems;
7) provide field trips to broaden experiential background for new learnings and as a basis for associative thinking;
8) numerous opportunities for success and immediate positive reinforcement;
9) setting of definite behavioral limits and helping child to meet them.

SECTION II

PROGRAM

The Responsive Environment Program for Spanish American Children (REPSAC) is a cooperative effort on the part of the Clovis Municipal Schools and the U.S. Office of Education, Bureau of Education for the Handicapped, Media Services and Captioned Films, under Public Law 85-905 as amended.

The major purpose of the REPSAC project is to serve as an effective educational intervention for three, four and five-year-old "high risk" Spanish American children. Children are considered "high risk" as a result of their low birth weight, 5-1/2 pounds or less at birth, and who will probably have accompanying handicaps as they enter the first grade. This program attempts to demonstrate that such an early intervention can provide such children the experiences necessary to succeed and remain in the educational mainstream.

The description of the program for 1971-72 is divided into the following areas. Rationale for the Program; Instructional Program; Media Development; Physical Facilities; Personnel; Parent-Community Involvement; Dissemination of Information; and Budget.

Rationale for the Program

The main tenet of the rationale for the development of this program stems from recent research which indicates that children with a very low birth weight generally experience childhood difficulties in the cognitive areas of development which can result in subsequent retardation as they progress through their formal education. Spanish American children with such a low birth weight coupled with a language different from that used in the American educational setting, have additional handicaps.

Further, Spanish American children with the foregoing handicaps whose home environment does not include toys, materials, games and media which can enrich their childhood experiences, enter the first grade with a notable disadvantage in comparison to children with such advantages.

The forementioned handicaps frequently prevent Spanish American children from normal advancement in the schooling process, even to the point of often being "mislabeled" and inheriting a stigma which usually dooms them to poor education, poverty and lack of higher educational and vocational training.

Recognizing that approximately 38% of the school population of New Mexico has a Spanish surname and the low educational level of the Spanish surname population, and accepting the premise that a high percentage of "high-risk" children come from this particular ethnic group, the idea of an early educational intervention became a reality in the form of REPSAC. (Additional information concerning background information and the rationale can be found in the 1971-72 funding request proposal submitted to Media Services and Captioned Films, U.S. Office of Education, and the Bureau of Education for the Handicapped.)

Focus of the Program

During 1971-72, REPSAC Nursery School had original enrollments of thirty-two "high risk" Spanish American children ranging from 3-5 years of age. The selection criteria used for enrollment were 1) birth weight; 2) health history; 3) educational level of parents; 4) educational attainment of siblings; 5) dominant language of the home and 6) income (poverty level).

Major Goals of the Program

The major goals of the project were: 1) early educational intervention to prevent placement of children in classes for the retarded;

2) provision of media and learning activities which will enhance and develop a favorable self-concept; 3) provision of media, learning activities and content which will strengthen or develop favorable attitudes toward the child's own and other cultural groups; and 4) formulation of plans and activities to increase parental interest and involvement in the program and in the education of their children.

These major goals were further translated into program objectives as follows:

1. To maintain or develop in children a favorable self image;
2. To improve the child's sensory and perceptual discrimination;
3. To develop the child's conceptual and problem solving abilities;
4. To develop language ability in both Spanish and English.

In addition, an objective was to maintain positive self concepts on the part of staff members.

The above objectives were used in the external evaluation, which was conducted by Adobe Educational Services. This is described in the section pertaining to Evaluation.

The other program objectives included:

1. Development of a model program for early childhood education for children from similar circumstances;
2. Development of a scope and sequence of early childhood instruction for children ages 3, 4 and 5.
3. Development of confidence, abilities and skills in the second language so that each child performs adequately and comfortably in the second language in verbal and cognitive areas.
4. Development of a comprehensive approach to early childhood bilingual education incorporating various theoretical constructs, technological

innovations and new curriculum materials which would be compatible to both program goals and early childhood educational theory and practices.

The latter objectives were used in the internal day-to-day assessment of the project by the director and the staff.

Instructional Program

The REPSAC instructional program for 1971-72 is described in terms of program operations and instructional components.

Program Operation

The instructional program operated on two half-day sessions five days a week. Fifteen students attended the morning session from 8:30 a.m. to noon, and fifteen students attended the afternoon session from noon until 3:15 p.m. The students were transported to and from school by a small bus provided by the project.

The state of New Mexico does not have a designated kindergarten program; therefore, the REPSAC project will provide two years of specialized instruction for the initial three-year-old group and subsequent groups, with one year of specialized instruction for the initial five-year-old group, so that a smoother transition into the first grade will occur for these children. From the 1971-72 group, eight students will enter the first grade in the fall of 1972. Plans are being made for placement and to collect follow-up data concerning these students.

Eating the noon meal with attendent language involvement is developed as a learning activity; therefore, all of the students are served a hot lunch which is transported in a mobile server from a public school cafeteria. The morning group is served prior to leaving school, and the afternoon group is served immediately upon arrival for the afternoon session.

Instructional Components

Planned learning activities for the children were designated for each three-hour day. The learning activities can be generally classified into group activities and individualized or small group activities. The activities are planned and administered using the Responsive Environment Concept.

Responsive Environment Concept

This approach was developed in the New Nursery School in Greeley, Colorado, which has two major objectives: 1) to help children develop a positive self image and 2) to help children develop their intellectual abilities. The REPSAC program utilized the Responsive Environment Concept in a bilingual (Spanish-English) setting. Approximately half of the daily activities are conducted in Spanish. When either language is used, the other is employed for reinforcement purposes and to maintain motivation for students of limited bilingual ability.

This approach is used in most of the group activities such as story-telling, reading, painting, cutting, working in the block area, manipulative toys, playground activities, snacks and lunch.

The individualized or small group activities include: The Responsive Environment Typing Booth, Project LIFE; Piaget-Early Childhood Curriculum; Language Development activities and Captioned Films.

The Responsive Environment Typing Booth

This typing or learning booth was developed by Dr. Omar K. Moore in Hampton, Connecticut and was later tested in the New Nursery School in Greeley, Colorado. The purpose of the learning or typing booth is to develop problem solving ability and language skills.

The booth is used in accord with the equipment, methods, and materials as developed by the Far West Laboratory for Educational Research and Development. The booth is

manned by a teaching assistant and equipped with a Smith-Corona 250 Electric Typewriter--primary print with a colored keyboard. Activities on the typewriter are classified into four phases: 1) free exploration; 2) search and match; 3) discrimination, and 4) words and stories.

Each child is given an opportunity to use the typing booth each day for about ten minutes.

One aspect of the internal evaluation program is the continuing evaluation of the effectiveness of the Responsive Environment Typing Booth. This evaluation is being conducted by the Far West Laboratory for Educational Research and Development, Berkeley, California.

Project LIFE

Project LIFE (Language Improvement to Facilitate Education), of the National Education Association, the U.S. Office of Education, and the General Electric Company have joined in this program, which is designed to provide a programmed language system to teach handicapped as well as non-handicapped children. More than 300 filmstrips have been developed by Project LIFE, and General Electric is providing the filmstrips as well as manufacturing the Student Response Program Master.

The concept employed by Project LIFE is a systematic approach to assist the language-impaired child to acquire a functional language system. This is accomplished primarily by the child interacting with specially designed programmed instructional materials in conjunction with the Student Response Program Master.

The programmed materials deal with the areas of perception-cognition, thinking skills, and basic vocabulary and language skills. The majority of materials are produced in a filmstrip format to be used in a remote-control filmstrip projector. The programs in each area are carefully sequenced so that the child can make satisfactory

progress through the individual subsystem in each area, working in an independent manner but in close conjunction with the teacher and the other curriculum areas.

In the language area, the child is provided with meaningful language contacts which will increase his vocabulary level as well as his language structure competency. Thus, by successfully interacting with each frame in a program geared to his specific language needs, the child gradually and sequentially increases his ability to comprehend and later to express his feelings, thoughts and emotions.

The children identified to use these materials are given an opportunity to work with this component three times per week.

The REPSAC project is one of 150 test centers throughout the country for Project LIFE materials. Evaluation of the materials was conducted during the year by the research division of Project LIFE.

Piaget-Early Childhood Curriculum

The Early Childhood Curriculum developed by Professor Celia Lavatelli is a Piaget curriculum drawing upon 22 sets of materials with more than 100 activities in the following areas: classification, number, measurement, space and seriation. The materials stress the use of the child's language and throught processes; therefore, expansion of language and concepts are based on child-initiated talk and activities.

The materials are designed for small group instruction and were used approximately twice a week.

Other Materials

Additional instructional materials used in the curriculum during the year included: Captioned Films, Language Development Kits, and Visual Language Series.

A variety of manipulative materials were utilized in the early childhood model. Also involved were many books, puzzles, tapes, records, charts, posters, puppets, costume materials and the like. Usual early childhood materials such as blocks, wheel toys, etc. were available for individual and group interaction.

Schedule of Learning Activities for A Typical Day

To illustrate how these various instructional components were used, a schedule of learning activities for a typical day is listed as Appendix A.

Media Development

The media section proved to be a great asset to the operation of the project. All of the staff has access to the media section; however, it is professionally staffed on a part-time basis by a media specialist from Eastern New Mexico University. Some of the main projects completed during the past program year included creating videotape presentations; slide programs; color-sound motion pictures and still pictures in both black-white and color; and dubbed sound material for use in cassettes. In addition, the media specialist repired audio-visual equipment, provided consulting services concerning purchase of media equipment, prepared information releases for news media and prepared informational brochures.

The videotape presentations include various classroom activities for record purposes, as well as such activities as Parent's Night, Christmas and other special occasions.

Slide programs were created on an experimental basis dealing with the child's home environment. The staff believes that by having a regular session in the "picture room" with each child that vocabulary can be developed in an interesting and meaningful manner. Slides were taken of the childrens' homes as well as their parents, brothers, sisters

toys and pets. Also, various subjects such as cars, trains, animals and the mailman were photographed. By using pictures of the children themselves or familiar objects, it is believed that vocabulary in both English and Spanish can be increased.

A thirty minute color-sound motion picture is scheduled for completion by July 1, 1972. This is a documentary film about the project and will be used for public showing. A shortened version of the film will be used by the home visitor to show parents and children in their homes. Various soundtracks will be prepared for the film, both in Spanish and English, and on an adult level as well as a child's level.

The dubbed material for taped cassettes came from various songs and stories so the children could take them home and listen with their parents. Both Spanish and English records are made available on an alternating basis.

Physical Facilities

The physical facilities, described in more detail in Section I, are considered appropriate for the conduct of the program employed. The teaching area contains about 1700 square feet of floor space while the office-workroom has approximately 850 more. The booth areas are adequate for individual instruction and measure about 7 by 9 feet. The yard contains about 7000 square feet for outdoor activities.

The facilities, set in the area of concentration of pupils and isolated from other institutions did in themselves appear to assist the creation of an environment responsive to the needs and desires of the children.

Personnel

Staff

The staff consisted of nine full time and two part-time members which included: Director (1); Teachers (2); Teacher Aides (3); Home Visitor (1); Secretary (1); Custodian/Bus Driver (1); Media Specialist (1-part-time); and Lunch Room Assistant (1-part-time).

One of the major factors contributing to the success of this unique project was the effectiveness of the staff. This effectiveness developed mainly as a result of a fusion of prior training of the instructional staff, experience in the project, positive attitudes toward the children and objectives of REPSAC, and an effective staff development program.

The major objectives of the staff development program for the past year were: 1) to help the staff develop their general knowledge of the difficulties encountered in early childhood education in the area of language, bilingualism, and child growth and development; 2) to acquaint the staff with various problems faced in special education such as defects in hearing, vision and speech; 3) to assist the staff to recognize various problems which are unnatural in young children so as to make the necessary referral for assistance; and 4) to assist the staff to become efficient in the use of the instructional components of the project.

To achieve these objectives of the staff development program, various in-service activities were provided and completed. The most important segment of the staff development program was the training provided the teachers and teacher-aides by the New Nursery School of the University of Northern Colorado, Greeley, Colorado, under the direction of Mrs. Oralie McAfee.

This training program is divided into two parts--on campus formal classroom training and a remote (on-site) in-service training program.

The formal classroom training consists of the staff members going to the New Nursery School on the campus of the University of Northern Colorado for two weeks of intensive classroom training.

The second part of the training program starts as the staff returns to their classroom duties and simultaneously teach and begin the tasks of the remote in-service training. This consists of completing sixteen lessons which are specifically prepared by the faculty of the New Nursery School. Each lesson or training unit is divided into four learning episodes. One episode of each lesson is on film for the staff member to view and implement into practice in the classroom with the children.

The learning episodes are short and specifically designed to produce an end result which is an observable behavior on the part of the child and/or teacher. The episodes normally are situations in which the teacher is involved because teacher training is a major objective of the program. After completion of each lesson, the necessary forms are completed and sent to the New Nursery School for grading and a critique which is returned to the staff member.

Upon successful completion of the program, five hours credit in early childhood education can be granted through the University of Northern Colorado.

Other types of in-service training activities for the year included: training sessions on the use of the various instructional components including equipment; various conferences concerning bilingual education and special education, seminars concerning low birth weight children, speech and language development; staff visits to

various bilingual first grade classes in the area.

In addition to these in-service training activities, there were two to three informal staff meetings each week since the first class of children started the program in May, 1971. Such meetings mainly concerned preparation of daily learning activities and operational procedures.

REPSAC Advisory Board

A professional advisory board was formed in August, 1971, to provide guidance and direction of project activities and the development of the various components. The board consists of individuals who can provide expertise in the fields of special education, bilingual education, early childhood education, educational technology and the Responsive Environment concept. Several of these professional educators are members of the New Mexico State Department of Education.

Consultants

Various consultants were used throughout the year to provide guidance and suggestions concerning the planning and operation of the project. Some of the areas which the consultants represented were: early childhood education; bilingual education; special education; psychology; research and development; and the Responsive Environment concept.

External Evaluation Team

The Adobe Educational Services, Lubbock, Texas was responsible for evaluation in terms of the general program objectives. The group maintained continuous contact and observation in the project. The evaluation team included bilinguals, a clinical psychologist, a speech therapist, early childhood, teacher education and educational research specialists. Professionals in the group were drawn from Texas Tech and Eastern New Mexico Universities. Native

speakers of Spanish assisted in parent interviews and language testing in Spanish.

Parental/Community Involvement

The project includes the development of a comprehensive "Parental Involvement" component. Much effort is made by the project to assist parents with understanding and practice of underlying principles of child care. This component attempted to demonstrate that given proper supervision, guidance and training, parental influences can make a marked difference on the child's performance in school.

Activities for parent involvement in the project include:

1. Regularly scheduled parent conferences on an individual basis. These are scheduled in the home as well as at school and involve a bilingual home visitor as well as teacher.
2. Actively soliciting parents' help in the teaching process. This involves reading a story to a child/children, serving snacks, assisting during a party, assisting with field trips and the like.
3. Encouraging personal visits to school to observe the activities of their children.
4. Encouraging older siblings in the home to assist target children with stories, etc.
5. Scheduling mothers for weekly work in the classroom.
6. Requesting fathers to assist in needed help at school.
7. Regularly scheduled Parents Nights are an integral part of the program.
8. Assistance to non-English-speaking parents is provided in various situations: doctors offices, interviews and enrolling older children in the various schools.

Community involvement is an integral part of the program. Brochures are sent to all service clubs and organizations in the city. A great deal of support has been provided from these organizations in terms of sponsoring parties for children and providing needed items for classroom use, etc.

Dissemination of Information

Dissemination of information concerning project plans, progress and results of this year's program were accomplished by the following means.

1. Periodic progress reports are made available to the staff, administration, school board, local area news media including Cannon Air Force Base and the State Department of Education.
2. Site visitation by interested individuals and groups.
3. Radio and television interviews with staff, administration, and parents.
4. Discussion of program activities at various service meetings.
5. Speaking engagements at various civic organizations.
6. Videotaped program components were made available to explain the program as well as for the use of in-service training for bilingual early childhood education programs.

Another means of disseminating information concerning the project will be the development and submission of at least one article to a profession journal and preparation of a resume for submission to the ERIC system. Also, a symposium proposal concerning the project is to be submitted to the American Educational Research Association to be considered for the annual meeting in New Orleans, Louisiana February 25-March, 1973.

Budget

During the period January 7, 1971 to August 25, 1972 (20 months), the total cost of the project was $144,570. These funds were provided by Media Services and Captioned Films, Division of Educational Services, Bureau of Education for the Handicapped, U.S. Office of Education. Of thi total amount, $88,279 was spent for personnel and employee benefits; $17,115 for equipment, furniture and other direct costs (including building remodeling); $5,007 for media equipment; $10,660 for travel; $16,201 for evaluation services; $5,000 for supplies and materials; $1,425 for communications; and $883 for duplicating and reproduction services.

It should be noted that the REPSAC project is designed as a demonstration and research project. As a consequence, initial costs of the project exceed costs of eventual replication. For example, costs of remodeling and equipping classrooms, producing videotapes, designing and printing instructional materials are not all recurring costs.

This external evaluation is related to program rather than fiscal matters. It is observed that the budget was planned, expended and records kept in accordance with and under the direction of the business office of the school district. The program staffing and materials and services are those projected in the proposal for the year.

SECTION III

EVALUATION

This portion of the report contains information pertaining to program objectives, evaluation design, participants, instruments, and analysis of data.

Objectives

For evaluation purposes, the following program objectives were used to assess the effect of the Responsive Environment Program for Spanish American Children (REPSAC). For clarity of organization and presentation, the objectives are presented under the headings of: first-year student objectives, first-year staff objectives and mid-year to mid-year objectives.

A. First-year student objectives
   1. A positive change in self-image will occur as a result of participation in REPSAC.
   2. A significant change in mental ability will occur as a result of participation in REPSAC.
   3. A significant change in language development, both in English and Spanish, will occur as a result of participation in REPSAC.

B. First-year staff objectives
   1. A positive self-concept will be maintained while participating in REPSAC.

C. Mid-year to mid-year student objectives
   1. A significant change in perceptual functions will occur as a result of participation in REPSAC.
   2. A significant change in speech articulation will occur as a result of participation in REPSAC.

Selection of Participants

Participants were selected on the basis of (1) weight at the time of birth, (2) heritage-Spanish American, and (3) disadvantaged - low income of family and other factors used to classify this state. Subjects for the project group were selected on these criteria and willingness to participate. From the remaining persons on the original list, those with similar handicaps were selected as control. Due to circumstances participants could not be randomly assigned to each group; therefore, the participants were equated statistically in the final analysis.

Evaluation Design

The basic evaluation design used to assess the effectiveness of REPSAC was a two-group (experimental-control group) pre-test-post-test covariance design. This design was employed to assess the effectiveness of first-year student objectives (A1,2 and 3). Central to this design was the selection of a control group which was used to compare the changes made in the experimental group.

Since subjects were not randomly assigned to each group, the covariance design was employed in order to statistically equate the groups. The pre-tests were used as covariates. The same type of design will be employed in evaluating the mid-year to mid-year objectives.

Participants

Participants in the REPSAC project consisted of thirty pupils from thirty-two original entries and nine staff members. Background information on the project students is presented in Table 1.

TABLE 1

BACKGROUND INFORMATION OF REPSAC STUDENTS AND CONTROL GROUP

Educational Background of Parents	Subject Group	Clovis Control	Portales Control
Grade School	28%	16%	19%
Jr. High	30%	36%	8%
Some High School	13%	36%	42%
H.S. Graduate	22%	8%	19%
Dominant Language Used in the Home			
English	15%	12%	7%
Spanish	15%		14%
Bilingual (Both)	70%	88%	70%

Table 1 (cont.)

Family Size Number of Children only	Subject Group	Clovis Control	Portales Control
1			3 (21%)
2	2 (7%)	3 (21%)	3 (21%)
3	5 (19%)	3 (21%)	4 (28%)
4	5 (19%)	1 (7%)	1 (7%)
5	2 (7%)	2 (14%)	1 (7%)
6	4 (15%)	1 (7%)	1 (7%)
7	2 (7%)	1 (7%)	
8	2 (7%)	2 (14%)	
9	2 (7%)		1 (7%)
10	0		

Table 1 (cont.)

	Subject Group	Clovis Control	Portales Control
Family Size Number of Children only			
11	2 7%	1 7%	
12	1 3.7%		
Income Monthly Estimate (by one parent)			
Welfare	8	1	3
$200			1
225	37%	21%	1 54%
250	1	1	1
275	1	1	

Table 1 (cont.)

Income Monthly Estimate (by one parent)	Subject Group	Clovis Control	Portales Control
$300	2	1	
325	1	15%	
350	2 37%		
375		1	
400	2		
450	3		
$500	3	3	2
550	1	1	
600	1 26%	35%	3 45%
650	1	1	

Table 1 (cont.)

	Subject Group	Clovis Control	Portales Control
Income Monthly Estimate (by one parent)			
$700	1	1 (21%)	
750		2	

Birth Weight Data

The incidence of low birth weights in the group of children selected for this project is extremely low when compared to the population as a whole. The data are shown in percentages in the following listing.

	Subject Group	Control Group
Less than 4 lbs.	10% (3)	7% (2)
4-0 to 4-8	16% (5)	7% (2)
4-9 to 4-15	10% (3)	10% (3)
5-0 to 5-8	45% (14)	40% (12)
5-9 - up	20% (6)	37% (11)

Measures Employed

Brief ncn-technical descriptions of each of the measures employed in the project evaluation for 1971-72 are described in the following paragraphs. Interested readers are invited to consult technical data provided by the publishers for the instruments or to consult the Mental Measurements Yearbook, (O,K. Buros, editor) for further information.

1. Developmental Profiles - (Bessell and Palomares, 1970) - These scales, subjective in that they are rating scales, were jointly scored by two teachers. The teachers made periodic ratings according to four affective areas: awareness of self, self confidence, sensitivity to others (awareness) and effectiveness (mastery). There is no objective scale of accomplishment or standard in terms of age-achievement scores.
2. Developmental Test of Visual Perception (Frostig) - This test is administered individually to young children. It seeks to measure five operationally-defined perceptual skills as follows: eye-motor coordination, figure-ground (figures against increasingly complex grounds), constancy of shape, position in space and spatial relationships. The subtests were selected "because clinical observation pointed to their seeming relevance to performance in nursery school, kindergarten and the elementary years." Normative data are available for 4 to 8 year-old children.
3. Hiskey-Nebraska Test of Learning Aptitude This test, given by an experienced examiner, does not depend entirely upon verbal communication for administration. It develops through sub-tests, a mental median and a derived operational level (IQ). It has a background of psychological and special education testing use. It contains eight subtests for this age group including bead patterns, memory for color, picture association, paper folding, visual attention span, block patterns and completion of drawings.

4. Illinois Test of Psycholinguistic Abilities (Kirk)
This test was attempted at the start of the project and then delayed until mid-year because of the operational levels of the children. It is planned for use at annual intervals for longitudinal comparison. It is "designed to measure certain operationally defined perceptual functions, and to pinpoint the age at which they normally develop." There were four subtest scores taken, auditory and visual reception and auditory and visual association.

5. Parental Interviews (locally developed-Cornett)
These individual interviews were made by a bilingual teacher through home visits. They were made in whichever language the parent appeared to prefer and were unobtrusive in that notes were not taken during the visit. The limited number of questions drew information as to parental reaction to the program.

6. Peabody Picture Vocabulary Test (Dunn)
This test has a history of use as a measure of mental age. It has had extensive use in the southwest in recent years in both English and Spanish. There is no standard version for the Spanish test, but the one used has been used widely. The test consists of sets of four line drawings to a plate and a vocabulary list. The subject points to the appropriate picture upon the examiners pronunciation of the naming or action word.

   The value of this test was not only to determine a base line, but also to measure individual and group gain according to this norm-referenced test in comparison with the control group.

7. Readiness Test for Disadvantaged Pre-School Children (Walker)
This test was selected because of its apparent applicability. It is described in detail in the PREP materials published by the Office of Education.

It consists of individual response to oral directions by selecting one of four or five pictured items in relation to a key item. It concerns such school readiness items as likenesses and differences.

8. Templin-Darley Articulation Test - This measure was administered by a qualified Speech Therapist. It is a general screening test of 50 items in English which required a mimicked response by the pupil. The items selected "have been found to discriminate between good and poor articulation of preschool and kindergarten children." In further support of the similarity of Experimental and Control groups it was found that a similar number in each group, according to this examination, needed further study.
9. Tennessee Self Concept Scale - This is a 100-item self description scale which has been shown to distinguish levels of personal effectiveness within the normal range as well as in deviancy. The dcale is simple for the subject, well standardized and multidimensional in its description of self-concept. The "Clinical and Research Form" was selected as being more applicable than the "Counseling Form" of the instrument.

Pre-Test Analyses

After selection and administration of the initial instruments, they were analyzed to determine the comparability of experimental and control groups. It was determined that differences in the groups for the learning aptitude and the language tests in both English and Spanish were not significant, as in the following.

Test	Mean Scores Ex.	Con.	Stan. Dev. Ex.	Con.	t	p
Hiskey	84.72	80.56	10.99	15.37	1.202	NS
Peabody (Eng.)	25.91	30.20	13.31	11.93	1.273	NS
Peabody (Span.)	18.34	19.48	10.72	19.88	.390	NS

The following statistical analysis is provided for the subject and control group scores according to sex. Perhaps because of the young age of the children, or for other reasons which cannot be explained, there were not significant differences according to sex.

Pre-test Analysis by Sex

Test	Mean Male	Mean Female	t	p*
Hiskey	79.33	83.40	.56	NS
Peabody (Eng.)	26.57	25.50	.44	NS
Peabody (Span.)	19.83	17.95	.88	NS

*Significance tested at the .05 level

The initial measures were also compared for accomplishment according to age level. This establishes a base against which progress of the same group can be compared. The chart which follows also bears the reminder that mean scores may be affected by extremes and that progress in terms of product will need to be individually assessed. The mean remains a useful statistic for indication of group change.

Comparison of Pre-test Scores by Age
(experimental group)

Age/Test	Hiskey Nebraska (Derived IQ)		Peabody (English)		Peabody (Spanish)	
	N	X	N	X	N	X
3	6	92.16	6	20.67	6	17.67
4	22	83.36	22	27.40	22	16.31
5	4	78.50*	4	25.50	4	30.50

*affected by one raw score of 60

The results of the examination of data for the participants and those identified as controls established that there were no significant differences between the groups on the measure used.

Mid-Year Testing

As indicated in the beginning of this section, there were objectives developed for which initial measures were taken at mid-year. These objectives related to perceptual functions and speech production. The assessment of these areas was complicated by the young age of many of the children at entry. The clinical psychologist with much experience in administering the Illinois Test of Psycholinguistic Abilities, considered the test too difficult for the youngsters developmental levels in the fall. By mid-year sufficient maturation had occurred to use the instrument. Both individual and group gains on this test can be assessed at mid-year 1972-73.

Other instruments used related to speech and perceptual functions. They were administered by a qualified Speech Therapist in individual settings. The measures were used with both experimental and control groups so that analyses could be made. From computation of t tests for the significance between means it was found that there were not significant differences in the two groups on the pre-measures taken at mid-year. These findings further establish that the control and experimental groups were quite similar in the beginning of the program.

Templin-Darley Pre-Test

Group	$\bar{X}$	S	t	p
Ex.	32.71	10.41	.69	NS
Control	34.43	11.21		

Frostig Pre-Test

Group	$\bar{X}$	S	t	p
Ex.	98.88	13.72	1.73	NS
Control	90.89	15.04		

Analysis of Data

This portion of the report will follow the format provided below.

- Program Objective
- Hypothesis
- Presentation of Data
- Findings

1. Program Objective - A positive change in self-image will occur as a result of participation in REPSAC.

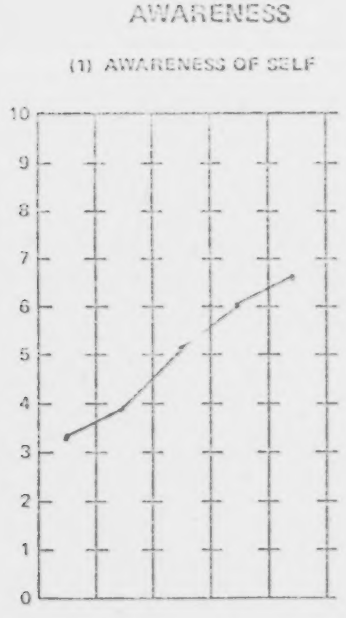
   Hypothesis - An early educational intervention program can have a positive effect on the self-image of disadvantaged Spanish American children.

   Presentation of Data - Date for this objective were gathered from the Bessell and Palomares Developmental Profile, and from language samples. Results are presented in Table 2.

   Findings - Results from the scales indicate that a positive change in self-image on the part of REPSAC participants did occur. In all four areas, a positive progression can be noted. The answer to the hypothesis is yes. The ratings derived from the scale used to arrive at the above findings must be interpreted in the same manner as the result from any rating scale, since the same weaknesses are present here as with any other situation where human raters are employed. However, it is the opinion of the evaluators that the teachers exercized as much objectivity as possible, and two teachers determined each scale placement at seven-week intervals.

TABLE 2

Self-Image Ratings of REPSAC Participants



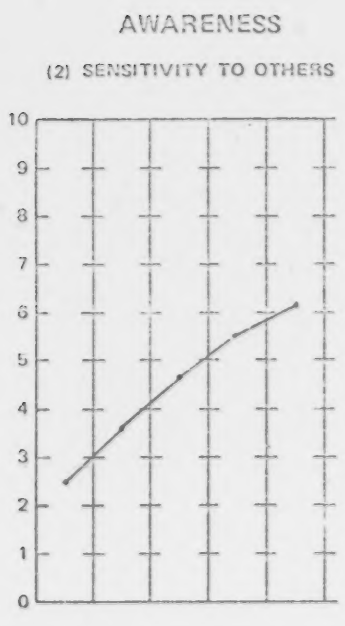
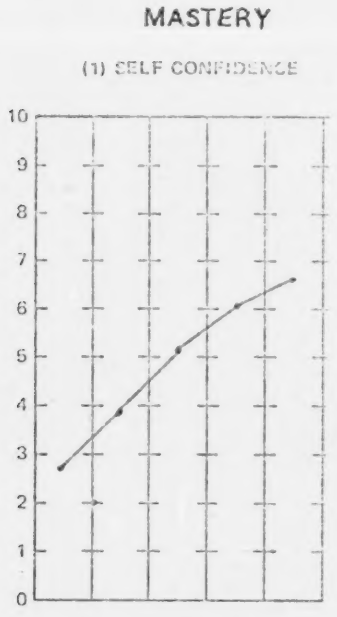
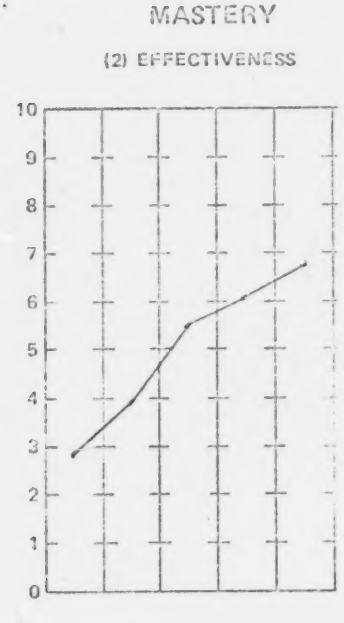


Table 2 (cont.)


MASTERY
(1) SELF CONFIDENCE
10
9
8
7
6
5
4
3
2
1
0


MASTERY
(2) EFFECTIVENESS
10
9
8
7
6
5
4
3
2
1
0

Language Samples- Samples of language were taken at the initiation of the program and during the post-testing from a random sample of the experimental group. The samples were taken as individual pupils were asked to respond to a large picture of a farm scene. The responses were recorded upon audio tape for one minute periods each in Spanish and English. Half of the group was tested first in Spanish and next in English. The procedure was then reversed to maintain a balance of language transfer insofar as possible. The same examiner administered both samples and attempted to utilize the same cues for each respondent. Open ended, leading questions were asked whenever the subject's response stopped.

This procedure appeared to be valid in several respects. It allowed comparison of sentence length and number of words used in each language. It utilized a stimulus which was unfamiliar to any of the respondents so that predetermined answers would not skew the findings.

Findings - Some general findings were evident and may be enumerated as follows:

1. The ability and willingness to respond was much higher on post-test. The children went willingly and confidently with the examiner, responded upon fewer cues, and made longers responses than at the pre-test.
2. The total (and average) number of running words increased sharply. Several of the children made no verbal responses in the beginning and others made only one-word responses. At the post-test each youngster responded with no child responding exclusively with only one word.
3. Pupils exhibited more ability to respond in English than in Spanish. The difference was almost indistinguishable at the beginning but nearly twice as large at the end of the year. It is also noteworthy that almost no Spanish words were given in response to English questions while more than half of the

of the responses to questions given in Spanish (and after instructions that the questions were to be answered in Spanish) were made in English. Averages of total word responses at year's end were 15.6 in English and 9.4 in Spanish.

4. Longer responses were noted in both languages on the post-test. In common with other children of this age, many of the sentences were actually predicates. For example, in response to the question "What is the man doing?" answers ranged from "working" to "taking the horses to the garage," with the common element of omission being the subject of the sentence. The majority of responses in both languages were one-word responses, which could be partially attributed to the stimulus picture.
5. Willingness to try a response was more evident in the post-test. In the last example above, for instance, the word "garage" was used to refer to a typical barn. This substitution was perhaps reflective of an urban upbringing, perhps the result of a poverty of vocabulary, but also is indicative of a straightforward attempt to give a full answer based upon the concepts the child had available.

There was no attempt to develop statistical analyses for these examinations since the response level was so low at the pre-test, and since the number of pupils used was rather small for reporting significance; a standard procedure was followed, however, and the results show sharply positive gain related to both cognitive and affective areas.

2. Program Objective - A significant change in mental ability will occur as a result of participation in REPSAC.

   Hypothesis - Students who participated in REPSAC will show a significantly greater gain in mental ability than children not enrolled in REPSAC.

   Presentation of Data - This hypothesis was tested using single classification analysis of co-variance with the pre-test scores as co-variates. Data for this test are presented in Tables 3 and 4.

   Findings - Data presented in Tables 3 and 4 indicate that when mean changes were adjusted on the basis of pre-test scores, the differences between the REPSAC subjects and the control subjects were significant. Therefore, the hypothesis regarding differences in mental abilily was supported. This decision was based on a calculated F value of 10.33 with 1 and 45 degrees of freedom.

   The data indicate that the REPSAC project did have a significant effect on the mental ability of the subjects involved. This finding is particularly significant due to the fact that several of the control subjects were enrolled in various pre-school programs and only a slight difference in pre-test scores existed.

TABLE 3

REPSAC AND CONTROL SUBJECTS' MENTAL ABILITY AND COVARIATE MEANS

Groups	N	Change Means		Covariate Means (Pre-tests)		
		Adjusted	Unadjusted	IQ	Language English	Language Spanish
Experimental	30	12.34	11.47	84.10	25.23	18.10
Control	20	5.55	6.85	81.40	32.35	18.90

TABLE 4

ANALYSIS OF COVARIANCE FOR MENTAL ABILITY DIFFERENCES BETWEEN REPSAC AND CONTROL SUBJECTS USING PRE-TESTS AS COVARIATES

Source of Variation	Degree of Freedom	Sum of Squares	Mean Square	F
Between	1	255.76	474.34	10.33*
Within	45	2690.02	45.91	

*Significant beyond the .01 level

Findings - Data presented in Tables 3 and 4 indicate that when mean changes were adjusted on the basis of pre-test scores, the differences between the REPSAC subjects and the control subjects were significant. Therefore, the hypothesis regarding differences in mental ability was supported. This decision was based on a calculated F value of 10.33 with 1 and 45 degrees of freedom.

The data indicate that the REPSAC project did have a significant effect on the mental ability of the subjects involved. This finding is particularly significant due to the fact that several of the control subjects were enrolled in various pre-school programs and only a slight difference in pre-test scores existed.

3. Program Objective - A significant change in language (English) will occur as a result of participation in REPSAC.

Hypothesis - Subjects who participated in REPSAC will show a significantly greater gain in language (English) than subjects not enrolled in REPSAC.

Presentation of Data - This hypothesis was tested using single classification analysis of covariance with the pre-test scores as covariates. Data for this test are presented in Tables 5 and 6.

TABLE 5

REPSAC AND CONTROL SUBJECTS' ENGLISH

LANGUAGE AND COVARIATE MEANS

Groups	N	Change Means		Covariate Means (Pre-tests)		
		Adjusted	Unadjusted	IQ	Language English	Language Spanish
Experimental	30	14.83	15.43	84.10	25.23	18.10
Control	20	8.70	7.80	81.40	32.35	18.90

TABLE 6

ANALYSIS OF COVARIANCE FOR ENGLISH LANGUAGE DIFFERENCES

BETWEEN REPSAC AND CONTROL SUBJECTS USING

PRE-TESTS AS COVARIATES

Source of Variation	Degree of Freedom	Sum of Squares	Mean Square	F
Between	1	699.21	386.59	8.26*
Within	45	2450.57	46.80	

*Significant beyond the .01 level

Findings - When change means were adjusted on the basis of pre-test scores, the resulting comparison was found to be significant. Therefore, the hypothesis regarding language (English) change was supported. Subjects participating in REPSAC achieved significantly more in English than subjects not enrolled in REPSAC. This hypothesis was supported on the basis of an F value of 8.26 with 1 and 45 degrees of freedom.

4. Program Objective - A significant change in language (Spanish) will occur as a result of participation in REPSAC.

   Hypothesis - Subjects who participated in REPSAC will show a significantly greater gain in language (Spanish) than subjects not enrolled in REPSAC.

   Presentation of Data - Analysis of covariance was employed to test this hypothesis in the same manner as the preceeding hypothesis. Data for this hypothesis are presented in Tables 7 and 8.

TABLE 7

REPSAC AND CONTROL SUBJECTS' SPANISH LANGUAGE

AND COVARIATE MEANS

Groups	N	Change Means		Covariate Means (Pre-tests)		
		Adjusted	Unadjusted	IQ	Language English	Language Spanish
Experimental	30	12.80	12.27	84.10	25.23	18.10
Control	20	9.85	9.85	81.40	32.35	18.90

TABLE 8

ANALYSIS OF COVARIANCE FOR SPANISH LANGUAGE DIFFERENCES

BETWEEN REPSAC AND CONTROL SUBJECTS

USING PRE-TESTS AS COVARIATES

Source of Variation	Degree of Freedom	Sum of Squares	Mean Square	F
Between	1	31.36	89.884	1.001 ns
Within	45	4296.42	89.802	

Findings - When change means were adjusted on the basis of pre-test scores, the differences between the mean gain of REPSAC subjects and subjects not participating in the program were not statistically significant. The hypothesis regarding changes in Spanish was, therefore, not supported, although the gains for the REPSAC pupils were greater than for the Controls.

Other Data

Although not directly matched with a program objective, a test was given as a post measure in the cognitive area to determine if the REPSAC group differed significantly from the Control group in their readiness for school. Results of the analysis indicate that REPSAC subjects scored significantly higher than Control students on the measure. The measure used was the Walker Readiness Test for Disadvantaged Pre-school children. Findings for this measure are analyzed in Table 9.

TABLE 9

COMPARISON OF REPSAC AND CONTROL SUBJECTS ON SCHOOL READINESS TEST

Group	X	X	T	P
Experimental	32.40	11.58	2.095	.05
Control	24.44	11.03		

Parent Questionnaires - During the Spring of 1972 an interview was held with parents of each child participating in REPSAC. Five questions were asked relating to observable changes noted by parents and their perceptions of the program. All comments were highly favorable and all parents indicated that they would allow their children to participate if the decision could be made again.

All parents reported observable changes, particularly in the language area. Improved Spanish usage was the item most frequently noted. The majority reported that their children showed increased willingness to attend the "school" and increased enjoyment in learning activities.

Attendance - In the regular school programs attendance is compulsory. In this program it is voluntary. It was determined that there was less than one per cent difference in attendance between first graders and this program (94.3% and 93.6% respectively).

This high voluntary attendance level reflects the positive acceptance of the program by pupils and parents.

Staff Attitude

It was an assumption that staff members with positive attitudes toward themselves and toward others would be desirable for this program. It was further considered that such staff members would receive satisfaction from participation in the program to the extent that they would maintain positive self concepts.

These assumptions were checked through the pre and post administration of the Tennessee Self-Concept Scale to all adult participants. Analyses indicate that personnel generally had positive self-concepts as they began the project and at the end of the first year. While there were minor fluctuations in numerical scores the largest gain in reflection of positive self concept was shown by one of the teachers. One hypothesis for such gain is that the teacher's feelings of self-worth were related to her feelings of accomplishment in terms of pupil growth. A t test for the significance of differences in means indicates no significant changes from pre to post measures for positive scores.

SECTION IV

CONCLUSIONS AND RECOMMENDATIONS

Findings

The following consists of an abbreviated summary of the findings derived from the evaluation of REPSAC.

1. Subjects participating in REPSAC made a significantly greater gain in mental ability than subjects not participating in the program.

2. Subjects participating in REPSAC made positive changes in self-image.

3. Subjects participating in REPSAC made a significantly greater gain in language (English) than did controls.

4. Subjects participating in REPSAC made greater gains in language (Spanish) than subjects not participating the program. These differences, however, were not statistically significant.

5. Staff of the project reflect improved skills in working with young children.

6. Staff participating in REPSAC maintained a positive self comcept.

7. Parents of subjects participating in REPSAC maintained a positive attitude toward the project and its program.

Subjective data from numerous observations by a variety of personnel strongly substantiate the empirical findings and the positive accomplishments of the project.

Conclusions

Based upon program objectives, observational and objective data the REPSAC project is functioning as planned and in accordance with the approved proposal for the program year. It is further concluded that the project is in the process of accomplishment of its objectives, and its long range goals. It appears to have the format, direction, facilities and staff to continue to provide a useful model for an early childhood educational intervention program.

Recommendations

The evaluation team, from study of the data and direct observation, makes the following recommendations:

1. That evaluation of the project be continued to (a) allow for consideration of the longitudinal effects of the program, and (b) measure the comparability of gain of subsequent years and groups.

2. That REPSAC serve as a pre-service and in service model/vehicle for staff development for devleoping projects for young children.

3. That attention be given to further development of the Spanish language as well as presenting activities and teaching through the use of Spanish.

4. That attention be given to the self-concept of personnel recruited for this and similar demonstration projects. This is based upon the assumption that continuing involvement of persons with positive self-concepts complement the objectives of the project.

5. That physical examinations by a pediatrician be administered to participants early in the year.

6. That present program components be continued, to confirm the positive findings of the first year of operation.

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APPENDIX A

TYPICAL SCHEDULE OF LEARNING ACTIVITIES

LANGUAGE DEVELOPMENT (group activity)
(approximately 15 min.)

English: "Children, Children, look in the mirror. Tell me, tell me who you see." Use hand mirror in front of each child and have children name the child using first and last name.

"Put your finger on your nose." A song to stress body parts. Tell the story of the "lonesome Hand" to also stress body parts.

Spanish: Talk about body parts, counting and colors.

FREE CHOICE ACTIVITIES

Art: Play dough and cookie cutters. Talk about the shapes formed by the cookie cutters. Good activity for small muscle development.

Center table: Flannel board faces with flannel features. Have hand mirror close by for children to see the arrangement of their own features as they put the features on the flannel board. Have children name each part as they put it on th head.

Light table: Trace and name triangle, circle, square and rectangle.

Block area: Blocks out with farm animals.

Language Master: Use cards for identifying body parts.

Small table: Colored beads for stringing, patterning and color identification.

Transition: To draw the children to one or two areas instead of scattered at many activities.
Center table: Lego
Book area: Records and stories.
Use "The Gingerbread Boy." "The Ugly Duckling." "The Happy Man and His Dump Truck."

INDIVIDUAL LANGUAGE ACTIVITIES (One child with one teacher)

Project LIFE (Language Improvement to Facilitate Education)
Responsive Environment Typing Booth
Plaget Early Childhood Curriculum

SECOND GROUP TIME ACTIVITY (approximately 10 min.)

English: "Clap your hands in time to the music" (Autoharp accompaniment)
Numerous verses such as "Stamp your feet." Pat your Head, Swing your Arms, Jump up and down.

"My Hands Upon My Head I place"

Count the children in the group.
Boys in group stand, count boys.
Girls in group stand, count girls.
Teachers in group stand, count teachers.

"Blanca Vasquez, you may walk outside. Steve Baca, you may walk outside." Sing the children's names as they go outside for a play period.

Spanish: "Venga A Ver Mi Rancho"
"Mi Papayo"
Rhythm band with puppets

OUTSIDE ACTIVITIES

Swings
Monkey bars
Sand pile

Water play (set us 3 stations near the fence). Put out syringes, basters, cans, funnels, eye droppers. Have children squirt the water through the fence. Josie, keep this under close supervision. Only one child at each station.

Put board between the two sets of steps. Have children jump on the board as you hold his hands and count the number of jumps. Count in English in the morning group. Count in Spanish in the afternoon group. Chris, supervise this activity.

SNACKS (No more than 5 children at the table at one time).

Use blender to make eggnog. "What shape is the egg?" Expect the older children to use the word oval. Ask the younger child if the egg is an oval or a square. Then expect the child to say oval. Let the children crack the eggs, add the milk and push the button to turn on the blender.

Cut toast into big triangle or little triangle. Ask children, "Would you like a big triangle or a little triangle of toast?"

APPENDIX B

Validation of Motor Ability Test

On May 2, 1972, Dr. Gene Coleman of the Physical Education faculty at Texas Tech University administered a series of motor ability items to the REPSAC project experimental group. The prupose of this testing was to select from this series of items a test that could be used to measure children's growth in motor ability.

From a ten-item trial test, five items were selected to be used as a motor ability test next Fall. The test will be used with the 1972-73 REPSAC subjects to measure the project's impact on motor ability. Items were selected on the basis of suitability to age group and the time required to administer each item.

Validity for each item has been established by the process of "face validity." Reliability for the selected items has been established and ranges from .87 to .92.

The test items are described as follows:

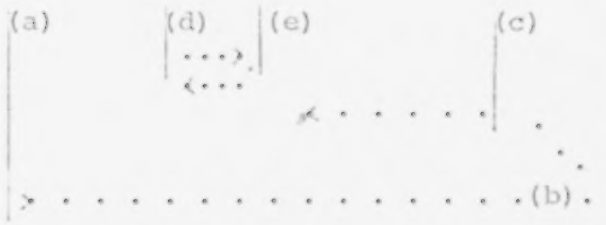
1. Dynamic Balance
   a. measures balance in walking
   b. walk a 4 x 100 inch tape

2. Static Balance
   a. measures balance in standing on one leg
   b. stand on dominant leg, place the other foot on the inside, supporting knee and hands on the hips

3. Ball Bounce
   a. measures coordination between hands and eyes: distance perception
   b. stand in a circle with a 3-foot radius and bounce and catch a rubber ball 9.5 inches in circumference.

4. Blocks
   a. measures hand-eye coordination and manual dexterity
   b. place 3 plastic objects on a wooden stick

5. Obstacle Race
   a. measures coordination, speed, agility, ability to change direction, sequence of moves, follow directions
   b. start flat on back with heels on the line (a); on signal "ready go" get up and start running as fast as possible to point (b); run behind (b) twice and continue; go under rope (18 inches high) (c); and run between (d) and (e) three times.



Preliminary testing of the 1971-72 REPSAC participants indicated that the items selected were within the capabilities of the subjects with a total testing time for each subject found to be approximately 15 minutes. This end-of-year test, in effect, will provide base line data against which future group performance may be compared.

APPENDIX C

PRE-TEST SCORES, POST-TEST SCORES,

CHANGE SCORES, MEANS, AND RANGES

OF REPSAC SUBJECTS

Hiskey-Nebraska (IQ)

Subject	Pre	Post	Change
1	81	94	13
2	96	101	5
3	76	92	16
4	71	82	11
5	96	107	11
6	86	72	14
7	71	96	25
8	78	88	10
9	88	93	5
10	97	100	3
11	92	103	11
12	75	99	24
13	97	98	1
14	84	110	26
15	80	91	11
16	78	89	11
17	76	94	18
18	70	91	21
19	94	104	10
20	94	122	28
21	106	108	2
22	92	94	2
23	88	108	20
24	84	96	12
25	88	90	2
26	92	98	6
27	89	104	15
28	60	65	5
29	74	76	2
30	70	74	4

Mean Change = 11.47

Range = 26

PRE-TEST SCORES, POST-TEST SCORES,

CHANGE SCORES, MEANS, AND RANGES

OF REPSAC SUBJECTS

	Peabody (English)		
Subject	Pre	Post	Change
1	25	35	10
2	38	57	19
3	36	58	22
4	37	45	8
5	30	45	15
6	18	26	8
7	41	53	12
8	10	24	14
9	21	33	12
10	9	21	12
11	33	41	8
12	27	55	28
13	19	41	22
14	8	27	19
15	29	46	17
16	24	43	19
17	14	34	20
18	5	22	17
19	42	61	19
20	41	46	5
21	31	40	9
22	16	37	21
23	29	38	9
24	33	40	7
25	34	35	1
26	29	46	17
27	44	63	19
28	15	39	24
29	14	36	22
30	5	33	28

Mean Change = 15.43

Range = 27

PRE-TEST SCORES, POST-TEST SCORES,
CHANGE SCORES, MEANS, AND RANGES
OF REPSAC SUBJECTS

	Peabody (Spanish)		
Subject	Pre	Post	Change
1	26	48	22
2	14	47	33
3	23	38	15
4	24	38	14
5	26	38	12
6	27	30	3
7	9	31	22
8	5	33	28
9	26	30	4
10	13	15	2
11	20	31	11
12	13	19	6
13	12	18	6
14	5	11	6
15	13	22	9
16	5	16	11
17	15	29	14
18	12	29	17
19	12	23	11
20	10	20	10
21	23	36	13
22	22	27	5
23	7	38	21
24	10	19	9
25	17	17	0
26	17	31	14
27	11	27	16
28	18	20	2
29	15	26	11
30	12	33	21

Mean Change = 12.80

Range = 31

PRE-TEST SCORES, POST-TEST SCORES,

CHANGE SCORES, MEANS, AND RANGES

OF CONTROL SUBJECTS

	Hiskey-Nebraska		
Subject	Pre	Post	Change
1	63	72	9
2	67	79	12
3	80	96	16
4	82	100	18
5*	68	93	25
6	90	84	- 6
7	61	64	3
8	82	78	- 4
9	67	80	13
10	78	74	- 4
11	60	72	12
12	78	79	1
13	71	74	3
14	94	98	4
15	121	96	-25
16	78	78	0
17*	79	110	31
18	86	99	13
19*	75	97	22
20	106	110	4
21	86	96	10
22	72	91	19
23	86	76	-10

*Eliminated for final analysis due to advanced age and first grade experience

Mean Change = 6.85

Range = 56

PRE-TEST SCORES, POST-TEST SCORES,

CHANGE SCORES, MEANS, AND RANGES

OF CONTROL SUBJECTS

	Peabody (English)		
Subject	Pre	Post	Change
1	38	49	11
2	41	42	1
3	41	42	1
4	49	45	- 4
5*	35	39	4
6	43	43	0
7	35	42	7
8	27	36	9
9	33	43	10
10	12	41	29
11	22	30	8
12	30	41	11
13	28	32	4
14	32	43	11
15	43	63	20
16	17	18	1
17*	30	41	11
18	31	44	13
19*	22	26	4
20	45	46	1
21	31	46	15
22	27	30	3
23	22	23	1

*Eliminated for final analysis due to advanced age and first grade experience

Mean Change = 7.80

Range = 33

PRE-TEST SCORES, POST-TEST SCORES,
CHANGE SCORES, MEANS, AND RANGES
OF CONTROL SUBJECTS

	Peabody (Spanish)		
Subject	Pre	Post	Change
1	28	67	39
2	6	8	2
3	39	51	12
4	34	42	8
5*	28	18	0
6	39	15	-24
7	14	37	23
8	11	12	1
9	13	17	4
10	4	35	31
11	5	20	15
12	22	9	13
13	14	21	7
14	9	11	2
15	18	42	24
16	20	23	3
17	22	32	10
18	27	9	-18
19*	24	33	9
20	6	38	22
21	26	45	19
22	41	50	9
23	2	4	2

*Eliminated for final analysis due to advanced age and first grade experience

Mean Change = 10.65

Range = 63